

### Abstract

An invasive imaging apparatus comprising: a flexible catheter with a proximal end and a distal end, the distal end being shaped for insertion into a blood vessel along a guide wire thereby to reach remote places in the vasculature or other organs, an optical assembly positioned at the distal end of the catheter comprising an image sensor positioned non-perpendicularly to the longitudinal axis of the catheter, at least one illumination source for illuminating an immediate region beyond the distal end of the catheter, and at least one working channel running from the proximal to the distal end of the catheter.